

## Baseline Variability

Definition: Fluctuations in the baseline FHR that are irregular in amplitude and frequency, visually seen on an EFM, and measured from peak to trough

How to determine baseline variability: In a 10-minute window, look at a 1-minute section of baseline with at least 2 cycles/min (excluding any accelerations and decelerations). Look at the lowest and highest rate, the difference between them is the range or amplitude of variability.

Variability	Absent	Minimal	Moderate	Marked
Range/ Amplitude	Undetectable	< or = to 5 bpm	6 to 25 bpm	> 25 bpm
Possible reason	Fetal sleep, Prematurity, Medication, Maternal smoking, Cardiac or CNS anomaly, Hypoxic acidemia	Fetal sleep, Prematurity, Medication, Maternal smoking, Cardiac or CNS anomaly, Hypoxic acidemia	Normal, healthy baby	Mild hypoxia, Catecholamines, Hyperoxygenation, Fetal stimulation, Normal maturation, Increased parasympathetic activity
Classification	Atypical if lasts 40-80 min Abnormal if lasts > 80 min	Atypical if lasts 40-80 min Abnormal if lasts > 80 min	Normal	Abnormal if > 25 bpm for > 10 min
What does it mean for fetus	Could mean very poor oxygenation and can lead to progressive deterioration or metabolic acidemia, action needs to take place	Interrupted oxygenation that could lead to metabolic acidemia, action should be taken	Healthy fetus	Could be normal or an indication of early hypoxia
Actions to Take	Rule out: fetal sleep by performing stimulation; prematurity by checking EDD and talking with family; medications (analgesics, sedatives, and narcotics), maximize fetal oxygenation by changing maternal position, discontinuing oxytocin, increasing IV fluids, and adding oxygen, watch for meconium in fluid, consider fetal scalp electrode, fetal scalp pH, consider delivery, discuss with family, document everything	Rule out: fetal sleep by performing stimulation; prematurity by checking EDD and talking with family; medications (analgesics, sedatives, and narcotics), maximize fetal oxygenation by changing maternal position, discontinuing oxytocin, increasing IV fluids, and adding oxygen, watch for meconium in fluid, consider fetal scalp electrode, fetal scalp pH, consider delivery, discuss with family, document everything	Continue to monitor	Continue to monitor, rule out artifact, maximize fetal oxygenation by changing maternal position, discontinuing oxytocin, increasing IV fluids, and adding oxygen, explain situation to family, look at whole clinical picture, fetal scalp pH, prepare for delivery, document everything

## References

Lee, L., Sprague, A., Yee, J. & Ehman, W. (2009). Fundamentals of fetal health surveillance: A self-learning manual. (4<sup>th</sup> ed.). The Canadian Perinatal Programs Coalition.

Miller, L. A., Miller, D. A. & Cypher, R. L. (2017). Mosby's pocket guide to fetal monitoring: A multidisciplinary approach (8<sup>th</sup> ed.). Elsevier Inc.